

**CLAIMS**

1. A display, comprising:  
a plurality of pixels, each pixel being configured to emit light; and  
5 a plurality of pixel control circuits, each circuit being configured to regulate emission of light from a pixel and including one or more two-terminal switching devices that include an organic semiconductor.
2. The display of claim 1, wherein the pixel control circuits include two-terminal  
10 switching devices arranged in anti-parallel.
3. The display of claim 1, wherein one or more of the pixel control circuits include two or more of the two-terminal switching devices arranged in series.
- 15 4. The display of claim 1, wherein the semiconductor includes one or more components is selected from a group consisting of a polymer, a conjugated polymer and an oligomer.
5. The display of claim 1, wherein the semiconductor includes one or more polymers  
20 having a backbone with units selected from a group consisting of acetylenes, phenylenes, vinylenes, fluorines, thiophenes and cyclopentadithiophenes.
6. The display of claim 5, wherein the semiconductor includes a co-polymer.
- 25 7. The display of claim 1, wherein the organic semiconductor includes MEH-PPV (poly(2-methoxy, 5 ethyl, (2' hexyloxy) para-phenylene vinylene).
8. The display of claim 1, wherein the organic semiconductor includes poly(3-hexyl-thiophene).

30

9. The display of claim 1, wherein the one or more two-terminal switching devices includes at least one electrode that includes an organic conductor.

10. The display of claim 9, wherein the organic conductor includes one or more  
5 components selected from the group consisting of polyaniline, polypyrrole, polyethylene dioxythiophene.

11. The display of claim 1, wherein the pixel control circuits are positioned on a transparent substrate.

10

12. The display of claim 1, wherein the one or more switching devices include the organic semiconductor positioned between a first electrode and a second electrode.

13. The display of claim 1, wherein the first electrode and the second electrode each  
15 include an organic conductor.

14. The display of claim 1, wherein the pixel control circuits are included on a substrate having a melting point less than 300 °C.

20 15. The display of claim 1, wherein the pixels each include a liquid crystal positioned between a first pixel electrode and a second pixel electrode.

16. A display, comprising:

a plurality of pixels, each pixel being configured to emit light; and  
25 a plurality of pixel control circuits, each circuit being configured to regulate emission of light from a pixel and including one or more electrodes that include an organic conductor.

17. The display of claim 16, wherein the organic conductor includes one or more  
30 components selected from a group consisting of polyaniline, polypyrrole and polyethylene dioxythiophene.

18. The display of claim 16, wherein at least one two-terminal switching device includes an organic semiconductor.

5 19. The display of claim 18, wherein the semiconductor is selected from a group consisting of a polymer, a conjugated polymer and an oligomer.

20. The display of claim 19, wherein the semiconductor includes semiconductor includes one or more polymers having a backbone with units selected from a group  
10 consisting of acetylenes, phenylenes, vinylenes, fluorines, thiophenes and cyclopentadithiophenes.

21. The display of claim 16, wherein the pixel control circuits each include a plurality of electrodes and each of the electrodes includes an organic conductor.

15

22. The display of claim 16, wherein the pixels each include a liquid crystal positioned between a first pixel electrode and a second pixel electrode.

23. A display, comprising:

20 a plurality of pixel control circuits on a substrate, each circuit being configured to regulate emission of light from a pixel on the display, the substrate having melting point less than 400 °C.

24. The display of claim 23, wherein the substrate has a melting point less than 300  
25 °C.

25. The display of 23, wherein the substrate has a melting point in a range of 60 °C to 350 °C.

30 26. The display of 23, wherein at least one of the substrates has a melting point in a range of 60 °C to 300 °C.

27. The display of claim 23, wherein the substrate includes a material selected from the group consisting of borosilicate glasses, sodalime glasses, mylar, PET (polyethylen terephthalate) and polyimides

5

28. The display of claim 23, wherein the pixel control circuits include an organic material serving as a semiconductor.

29. The display of claim 23, wherein the pixel control circuits include one or more  
10 electrodes that include an organic conductor.

30. The display of claim 23, wherein the pixels each include a pixel electrode connected to a pixel control circuit.

15 31. A display, comprising:  
a liquid crystal positioned between substrates, at least one of the substrates having a melting point less than 350 °C.

32. The display of 31, wherein each of the substrates has a melting point less than 300  
20 °C.

33. The display of 31, wherein at least one of the substrates has a melting point in a range of 60 °C to 350 °C.

25 34. The display of 31, wherein at least one of the substrates has a melting point in a range of 60 °C to 300 °C.

35. The display of claim 31, wherein at least one of the substrates includes a material selected from the group consisting of borosilicate glasses, sodalime glasses, mylar, PET  
30 (polyethylen terephthalate) and polyimides

36. The display of claim 31, wherein a plurality of pixel control circuits are positioned on one of the substrates, each pixel control circuit being to regulate emission of light from a pixel on the display and including an organic material serving as a semiconductor.

5

37. The display of claim 31, wherein a plurality of pixel control circuits are positioned on one of the substrates, each pixel control circuit being configured to regulate emission of light from a pixel on the display and including one or more electrodes that include an organic conductor.

10

38. A method of forming a display, comprising:  
obtaining a substrate for use in the display; and  
forming a plurality of pixel control circuits on the substrate, each pixel control circuit to regulate emission of light from a pixel;

15 wherein forming the pixel control circuits includes depositing a semiconductor on the substrate from a solution.

39. The method of claim 38, wherein the semiconductor is an organic semiconductor.

20 40. The method of claim 39, wherein the semiconductor is selected from a group consisting of a polymer, a conjugated polymer and an oligomer.

41. The method of claim 39, wherein the semiconductor includes one or more polymers having a backbone with units selected from a group consisting of  
25 acetylenes, phenylenes, vinylenes, fluorines, thiophenes and cyclopentadithiophenes.

42. The method of claim 39, wherein the organic semiconductor includes MEH-PPV (poly(2-methoxy, 5 ethyl, (2' hexyloxy) para-phenylene vinylene).

30 43. The method of claim 39, wherein the organic semiconductor includes poly(3-hexyl-thiophene).

44. The method of claim 38, wherein the solution includes the semiconductor and a solvent.

5 45. The method of claim 38, wherein depositing the semiconductor on the substrate includes spin-coating, spray-coating or dip-coating.

46. The method of claim 38, wherein depositing the semiconductor on the substrate includes modifying one or more portions of the substrate such that the solution  
10 preferentially adheres to regions of the substrate.

47. The method of claim 46, wherein modifying one or more portions of the substrate includes increasing the hydrophobic nature of one or more portions of the substrate.

15 48. The method of claim 47, wherein modifying one or more portions of the substrate includes increasing the hydrophilic nature of one or more portions of the substrate.

49. The method of claim 38, further comprising:  
patterning the semiconductor deposited on the substrate.

20

50. The method of claim 38, wherein patterning the semiconductor includes using photolithography to pattern the semiconductor.

51. The method of claim 38, wherein depositing the semiconductor on the substrate  
25 includes printing the semiconductor on the substrate.

52. The method of claim 51, wherein printing the semiconductor on the substrate includes ink-jet printing, thermal transfer printing, silk-screen printing or offset printing.

30 53. The method of claim 51, wherein depositing the semiconductor on the substrate includes ink-jet printing.

54. The method of claim 38, wherein forming the circuits on the substrate includes forming electrodes on the substrate and depositing the semiconductor includes depositing at least a portion of the semiconductor over the electrodes.

5

55. The method of claim 38, wherein forming the circuits on the substrate includes forming one or more electrodes that include an organic conductor on the substrate.

56. The method of claim 38, wherein the substrate has a melting point less than 350 °C.

10

57. A method of forming a display, comprising:  
obtaining a substrate for use in the display; and  
forming a plurality of pixel control circuits on a substrate, each pixel control  
circuit being configured to regulate emission of light from a pixel;  
wherein forming the pixel control circuits includes patterning an organic  
semiconductor on the substrate.

15

58. A method of forming a display, comprising:  
obtaining a substrate for use in the display; and  
forming a plurality of pixel control circuits on the substrate, each pixel control  
circuit being configured to regulate emission of light from a pixel;  
wherein forming the pixel control circuits includes forming one or more  
electrodes that include an organic conductor on the substrate.

20

25

59. The method of claim 58, wherein the organic conductor is selected from a group consisting of polyaniline, polypyrrole, poly ethylene dioxythiophene.

60. The method of claim 58, wherein forming the one or more electrodes on the  
substrate includes depositing the organic conductor on the substrate from a solution.

30

61. The method of claim 60, wherein depositing the organic conductor on the substrate includes spin-coating, spray-coating or dip-coating.

62. The method of claim 60, further comprising:

5         patterning the organic conductor after depositing the organic conductor on the substrate.

63. The method of claim 62, wherein patterning the organic conductor includes using photolithography to pattern the semiconductor.

10

64. The method of claim 60, wherein depositing the organic conductor on the substrate includes patterning the semiconductor on the substrate.

65. The method of claim 60, wherein depositing the organic conductor on the  
15         substrate includes ink-jet printing, thermal transfer printing, silk-screen printing or offset printing.

66. The method of claim 60, wherein depositing the semiconductor on the substrate includes ink-jet printing.

20

67. The method of claim 58, wherein the substrate has a melting point less than 350 °C.

68. A display, comprising:

25         a plurality of pixels configured to emit light, the pixels each including a pixel electrode that includes an organic material; and

          a plurality of pixel control circuits, each circuit being configured to regulate emission of light from a pixel.

30